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ANALYSIS OF THE EFFECTS ON THE LIVELIHOOD OF THE POOR OF ELIMINATION OF TRADE BARRIERS, INCREASED COMPETITIVENESS, TRADE FLOWS, EXTERNAL SHOCKS, DIVERSIFICATION OF EXPORTS, PARTICULARLY OF LABOUR-INTENSIVE GOODS, AND MARKET ACCESS FOR SUCH GOODS

International trade and poverty alleviation

Report by the UNCTAD secretariat

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INTRODUCTION

1. This report has been prepared in accordance with directives based on the work programme that was adopted by the Standing Committee on Poverty Alleviation at its first session, in January 1993, under the heading "international trade and poverty alleviation". As reformulated and abridged by the Standing Committee at its second session in July 1994, the note contains an "analysis of the effects on the livelihood of the poor of elimination of trade barriers, increased competitiveness, trade flows, external shocks, diversification of exports, particularly of labour-intensive goods, and market access for such goods".

2. The Uruguay Round Agreement provides the main context for the analysis of the report. In Part I, the new trade regime is analysed from the point-of-view of "what are its consequences for poverty in the developing countries?"; in Part II, the analysis examines the question "how can developing countries adapt to reap the benefits from the increased opportunities?".

3. More specifically, Section I of the report concerns the impact on poverty of reduced trade barriers and increased trade flows, competitiveness and external shocks. This section contains a brief qualitative analysis of the issues and quantitative estimates about the possible impact of the Uruguay Round on the incidence of poverty in the developing regions of the world. The details of the modelling exercise are contained in the technical annex.

4. Section II of the report concerns the effects on the poor of labour-intensive goods for export, diversification of exports and market access of such goods. It is based on the findings of an UNCTAD-organized Workshop on Poverty Alleviation through International Trade that was held in Santiago, Chile, from 10 to 13 January 1995. The Workshop was hosted by the Government of Chile and supported by UNDP and the Dutch and Swiss Governments. It focused on gains in the livelihood conditions and prospects of the poor of working in export-oriented micro- and small-scale enterprises and non-traditional agro-export production and processing. A separate report of the workshop proceedings will be issued as a non-sessional document at the third session of the Standing Committee on Poverty Alleviation.

Box 1

THE MAIN RESULTS OF THE URUGUAY ROUND

- All non-tariff barriers will be converted into tariffs. The tariffs of developed countries on agricultural products will be reduced by 36%, and by 24% by developing countries. The volume of subsidized exports will have to decline by 21% and domestic subsidies must be reduced by 20%. However, least developed countries are exempted from these obligations.

- Textiles and clothing (cf. Multi-Fibre Agreement) will be liberalized within a period of 10 years, with most of the liberalization occurring in the last year.

- Tariff reductions of some 40% on manufactures, in five equal annual reductions are required. The weighted average of tariffs will thus be reduced from over 6% to under 4%. A major breakthrough was achieved in prohibiting voluntary export constraints and other distorting "gray area measures". In addition, all countries agree not to increase their current tariff levels ("bindings").

- Services were included in the multilateral framework of world trade through the *General Agreement on Trade in Services*.

- An agreement on trade-related intellectual property rights (IPR) establishes standards of protection and provisions for enforcement of IPRs.

- Quantitative restrictions for balance of payment or other similar reasons, as well as trade-related investments violating GATT principles, will no longer be acceptable.

In addition, the Uruguay Round includes measures in the area of rules and discipline, such as tighter discipline in using *safeguards* to protect domestic industries, clarification of *anti-dumping rules*, *subsidies* and improvement of dispute settlement mechanisms. The agreement also included the creation of *World Trade Organization*.

Source: Trade and Development Report, 1994. UNCTAD.

I. IMPACT ON POVERTY OF REDUCED TRADE BARRIERS AND INCREASED TRADE FLOWS, COMPETITIVENESS AND EXTERNAL SHOCKS

A. General background

5. The Uruguay Round is significant for developing countries in that it will integrate them more fully into the international trade system. Increased access to international markets is not merely a means to increase export revenue, but can be a force for economic transformation and poverty reduction. For countries that are less globally competitive, however, the liberalization of trade can lead to increased marginalization and poverty.

6. The introduction of the new trade regime (see Box 1) is expected to restore predictability and discipline to the international trading system, while halting the erosion that otherwise would have occurred in the trade environment. Consequently, world trade flows will rise and this should have a positive impact on the welfare of nations that have a comparative advantage and compete successfully for market share. For many low-income countries, on the other hand, the new trade system could have medium- to long-term negative effects in terms of trade losses due to the erosion of trade preferences, and hence export losses, and higher imported food prices, and hence higher import bills.

7. In this part of the report, a first-round effort is made at estimating the likely medium- and long-term effects of the Uruguay Round on poverty in the developing countries. The projected changes that are discussed and modelled are the outcomes strictly attributable to the Uruguay Round accord, not the full range and composition of possible changes. The focus is on the effects on poverty of articles and provisions of the Round that are most likely to have the greatest impact. The main assumptions are stated in qualitative terms. In addition, estimates of the impact of the Uruguay Round on poverty in the developing countries are quantified through an econometric modelling exercise. It has not been possible at this stage of modelling work to go into in-depth, country-by-country detail.

B. Consequences of the new trade régime

1. Reductions in trade barriers

8. The reduction of trade barriers resulting from the Uruguay Round will affect poverty mainly with respect to trade in agricultural goods, textiles and clothing and other labour intensive manufactures, as these products are significant for many developing countries as current or potential exports, as well as imports. The liberalization of trade in these products should help expand the trading opportunities of developing countries and thus contribute to an overall reduction of poverty in the developing world. On the other hand, the reduction in domestic support for agricultural production and in export subsidies is likely to lead, at least for a transitional period, to higher world prices for basic foodstuffs. The incidence of poverty could therefore increase in low-income developing countries that are net food importers.

9. Since the trade liberalization measures to be undertaken by developed countries are to be phased in gradually or introduced for the most part only near the end of the implementation period, the impact on developing countries will not

be felt in full until after the year 2000. Also, it should be noted that after the implementation period, relatively high tariffs will continue to be applied in some sectors for which developing country exporters have a clear comparative advantage in terms of labour cost. As a result, the impact of the general reduction in trade barriers of developed countries on the incidence of poverty in developing countries is likely to be muted and to occur with a lag.

10. With respect to manufactures, some of the largest percentage reductions in trade barriers have either already been made or will be made by developing countries in Latin America and Asia, with smaller cuts in some African countries. A number of developing countries have already substantially liberalized imports on their own initiative or as part of structural adjustment policies agreed upon with the IMF and World Bank.

11. The impact on poverty of import liberalization in the developing countries will vary depending on whether imports consist primarily of (a) intermediate inputs for producers of export and import substitutes, or (b) consumer goods that compete directly with locally produced goods. While in the former case imports could provide a spur to domestic production and employment, and hence poverty reduction, in the latter case, poverty could grow in the short to medium term as a result of production losses due to a switch to imports. Such losses are likely to be offset only in the longer term, following investment in the production of other goods in response to the reduced trade barriers of other countries.

12. The most-favoured nation (MFN) reduction of trade barriers achieved through the Uruguay Round will also erode the trade advantages of a number of developing countries that have gained market access under preferential arrangements such as the Generalized System of Preferences (GSP). As discussed further on, MFN tariff reductions, by reducing the margin of preference enjoyed by preference-receiving countries, will allow much of the trade creation effects of reduced tariffs to be transferred to other exporting countries. In such cases, the incidence of poverty in more competitive countries could decline at the expense of growing poverty in others.

2. Increased competitiveness

13. Developing countries will be subjected to increased competition for maintaining or expanding export market share as a consequence of the Uruguay Round. The new trade regime is advantageous for those countries that are competitive or will be in a position to seize the opportunities that the new trade system offers. Given greater certainty and ease of access, a long term effect could be increased investment for exports in competitive developing countries, resulting in a more rapid and sustained rate of economic growth and poverty reduction.

14. Factors such as low labour costs, large supplies of skilled labour, availability of entrepreneurial talent, depth of infrastructure, efficiency of investment, adequacy of incentives, a positive climate for foreign investment, and appropriate institutions for marketing will be major determinants of competitiveness. In clothing exports, for instance, countries such as China and India that have advantages of low-cost, skilled labour and raw materials, but which have until now been constrained by MFA quotas, can be expected to gain market share. A new generation of subcontractor, low labour-cost countries may also gain from the dismantling of quotas, with consequent poverty reduction in those countries. Such countries would be dependent on others, for example, for

fabric and for marketing. For other manufactured products, East and South East Asian countries in particular will gain from tariff reductions on goods in which they compete for market share with the developed countries, or for which they produce component parts through subcontractual arrangements.

15. Increased competition, of course, means that there will be losers as well as gainers. Countries whose competitive advantages have resulted from quotas or other special preferential treatment can be expected to lose share and in some instances may become marginal suppliers. Their replacement by other countries could also lead to a more concentrated structure of exports in certain industries over the long term. The extent of the poverty impact for countries that will lose market share depends on whether rules of origin criteria applied to their exports.

16. Countries whose preferences have been eroded, moreover, can expect to face greater competition in entering new export markets, not only from other developing countries excluded from GSP schemes or whose preferences were quota-constrained because they had already established their competitiveness, but also from the developed countries as well. The erosion of trade preferences that might otherwise have provided such countries with a catalyst for investing in and developing new export sectors represents a source of foregone poverty reduction. The limited progress that some primary producing countries have made in moving downstream is even more unfortunate to the extent that their tariff preference through the GSP and through the Lomé Convention on the EU market have generally been greater the higher the level of processing, and that this advantage of being exempted from tariff escalation will now be eroded.

3. External shocks

17. Shocks associated with the new trade system could occur with varying degrees of size and predictability. The largest and most damaging to the poor are likely to be more difficult to predict and only loosely associated with the Uruguay Round. For instance, reductions of tariffs and other barriers to the flow of goods and services could not only lead to a sharp rise in the current account deficit, but are also closely entwined with the removal of barriers to the international flow of capital, and their combined impact is capable of producing substantial shock effects that are difficult to predict with accuracy. For example, recent shocks associated with balance of payment crises in some countries have been in part due to the combination of import liberalization policies and speculative capital inflows which have financed massive trade deficits. The resulting currency devaluations and economic austerity measures that have had to be introduced may have a massive impact on poverty, at least in the short term, in the countries concerned. [1]

18. Besides large shocks that can be difficult to foresee, smaller shocks are expected to occur that will be directly attributable to the implementation of the Uruguay Round. Seemingly minor effects of the new trade regime at the global level, however, may represent major shocks to the individual countries concerned.

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[1] If the debt crisis of the 1980s in Latin America provides any order-of-magnitude measure to go by, it is worth noting that during that decade urban poverty doubled and rural poverty increased substantially in the region. See O. Altimir, "Income distribution and poverty through crisis and adjustment", ECLAC Working Paper No. 15, Santiago, September 1993.

An example is the losses in earnings of some ACP countries from a reduction of the trade preferences in the EU market. Similarly, countries that have been able to export clothing as a result of quota restraints on more efficient producers will face shocks that will reduce the number of poor persons employed in that sector of their economy. An example of a small country that will suffer quota-related shocks in both sugar and clothing exports is Mauritius.

19. Some low-income countries that will have to cope with significant shocks are those that will experience a terms-of-trade decline stemming from the combined effects of (a) erosion of preference margins on tropical agricultural products and (b) price rises for temperate agricultural imports as a result of the Uruguay Round Agreement on Agriculture [2/]. The first is likely to hurt farm labourers and small producers of cocoa and coffee in sub-Saharan Africa, and the latter the basic consumptions needs of food-deficit households of sub-Saharan Africa and other developing regions.

4. Trade flows

20. The anticipated flows discussed under this heading correspond only to those flows that can be specifically attributed to the Uruguay Round settlement, not to general, overall flows. It is expected that the Round will lead to an increase in trade creation and trade shifts, with the result that the trade flows and patterns that will emerge will be distinct from the old. After all changes have had a chance to work themselves through, however, the net effects of trade-flow shifts and increases are expected to be small for developing countries as a whole. Moreover, most of the main changes will be slow to appear due to the phasing of the agreements.

21. Though small, the net changes should on balance be positive for both economic growth and poverty reduction in the developing countries taken as a whole. The regional distribution of gains and losses, however, will be quite pronounced: Asia and Latin America will be expected to gain, while the Caribbean and especially Sub-Saharan Africa will be worse off.

22. The countries which will gain the most are those which have been most constrained in the past by trade barriers, and those countries exporting manufactures for which tariffs are coming down substantially. The countries that have the most to lose are those which have benefitted from preferential market access, e.g. GSP and Lomé, and whose preference margins will now be substantially eroded. Food-deficit countries will also be negatively affected by higher world food prices, as already discussed.

23. The main reason that overall poverty is likely to be reduced is that China, if it accedes to the World Trade Organization, and India are expected to increase substantially their share of world markets in clothing and other labour-intensive export manufactures. [3/] Since around half of the world's absolute poor live in

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[2/] The Uruguay Round Agreement on Agriculture is likely to increase them prices of temperate agricultural products by between 5 to 10 per cent on average. See FAO, "Impact of the Uruguay Round on agriculture", CCP:95/13, January 1995.

[3/] The relative share of textiles and clothing, for instance, is expected to continue declining in the developed countries, while increasing in more dynamic developing countries having clear advantages of experience and low labour costs, and which experienced quota-based restraints in the past. China and India satisfy

those two countries, [4] any significant gains to them from the Uruguay Round are likely to swamp all other effects on poverty in other developing countries. However, if the removal of MFA quotas were to lead developed countries to erect new types of barriers, the gains for China and India on the MFA could be blunted and the net impact of the Uruguay Round on global poverty reduction could be small. For that reason, it is possible at this point in time only tentatively to predict that the new trade regime will reduce the incidence of global poverty.

24. Shifts in suppliers will also occur in agriculture. World prices in temperate agricultural products should edge up as a result of the commitments on agriculture, but the markets of most developed countries will remain protected by high tariff equivalents. [5] As a result, food-surplus countries such as Argentina will be limited to exporting foodstuffs to food-deficit developing countries, but at least will not be elbowed out in those markets by subsidized exports from the developed countries. In Asia, Thailand in particular should benefit from the export of rice to Japan, which has liberalized its food imports. The net impact on poverty between food producers and consumers is an empirical question of weighing the benefits of increased seasonal employment for landless labourers against the higher costs of food for food-deficit households.

25. Shifts will also occur in tropical agricultural products, with Latin American countries such as Brazil and Colombia gaining market share from African countries such as Côte d'Ivoire, Kenya, Cameroon and Ghana in coffee and cocoa exports. As already discussed, the trade shift toward Latin American producers is expected to occur as a result of the erosion of ACP preferences. Because of less mechanized forms of production and the less concentrated structure of land ownership in Sub-Saharan Africa, the loss of market share to Latin American countries should result in a net increase in global poverty.

26. In the case of industrial goods, reduced MFN tariffs could lead to some trade shifts against developing countries as a whole, although a number of East and South East Asian countries will probably continue to compete effectively with developed countries in the production of high-technology goods where tariff reductions will be significant. Poverty should decline significantly in those Asian countries as a result. For most other developing countries, the MFN cuts should have little effect on their poverty levels since their utilization of preferential schemes for sophisticated industrial goods has on the whole been limited.

27. Finally, although almost two-thirds of developing country exports go to the developed countries, there is likely to be continued growth in trade among developing countries. In some cases, trade liberalization measures adopted in connection with the Uruguay Round will contribute substantially to this trend. This is particularly the case for East and South East Asia where countries are

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these conditions, as does to a large extent Pakistan.

[4] For 1985, the World Bank estimates that 56 per cent of the world's poor (defined as earning $365 per capita per year in 1985 PPP) lived in India and China alone. See World Bank, World Development Report 1990: Poverty, Oxford University Press, New York, 1990, table 2.1.

[5] See, for instance, D. Hathaway and M. Ingco: *Agricultural liberalization and the Uruguay Round*, paper presented at World Bank conference on the "Uruguay Round and the Developing Economies", Washington, D.C., 26-27 January 1995.

growing rapidly and have become important markets for each other and for other developing countries. This reciprocal opening up of national markets should lead to an overall demand for goods and services that, following a perhaps difficult initial period of adjusting to new patterns of development, could result in a secular decline in poverty.

C. Quantifying the impact on poverty

28. In seeking to quantify the impact of the Uruguay Round on poverty, the assumption is made in this part of the report that the effects of the Round on poverty will be transmitted through the Round's impact on economic growth. Since the main comparative advantage of developing countries in international trade lies in their low labour costs, it is reasonable to assume that any export gains or losses from the Uruguay Round will have income effects even at low income levels. In quantifying the impact on poverty, a uniform absolute poverty line is applied to all countries. Hence, the lower the GDP per capita level of given country, the larger will be the effect of growth on poverty.

29. While a number of efforts have been made to estimate the impact of the Uruguay Round on economic growth [6], no attempt has been made to quantify the impact of the Round on poverty in the developing countries. All existing exercises have estimated that the new trade regime will increase world economic growth. Two of the models have been selected for the present exercise since they disaggregate the Uruguay Round effects by developing regions, and also by selected countries. They are the Harrison et al model and the Rural-Urban, North-South (RUNS) model. [7]

30. As may be seen in Table 1, there are important differences between the estimates of the Harrison et al and the RUNS models for China and Mexico. Harrison et al predict an overall slight gain to China and Mexico whereas the RUNS model predicts a loss. The differences are probably largely due to the focus of the RUNS model on agriculture. The Harrison et al estimates for China, however, seem surprisingly low in view of that country's potential trade share gains from the replacement of MFA quotas by tariffication (see Section IB of the report).

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[6] Some of the most recent studies using the final agreement of the Uruguay Round are J. Francois, B. McDonald and H. Nordström: *Assessing the Uruguay Round*; I. Goldin and D. van der Mensbrugghe: *The Uruguay Round: An Assessment of Economywide and Agricultural Reforms*; G. Harrison, T. Rutherford and D. Tarr: *Quantifying the Uruguay Round*; and T. Hertel, W. Martin, K. Yanagishima and B. Dimaranan: *Manufacturing and MFA liberalization*. All studies were presented at the World Bank conference "The Uruguay Round and Developing Economies", Washington, D.C., 26-27 January 1995.

[7] The RUNS model estimates the effects of changes that correspond mainly to agriculture and disaggregates the results to the developing regions and some developing countries. The Harrison et al model incorporates the effects for manufactures as well as agriculture, and provides estimates for the long term, in addition to those during the implementation of the Uruguay Round. However, its disaggregation of the results to different groups of developing countries is not as comprehensive as the RUNS model. For full details on the models, see G. Harrison et al (op. cit.)
and I. Goldin and D. van der Mensbrugghe (op. cit). The latter is referred to as the Rural-Urban, North-South (RUNS) model.

Table 1

Comparison of the estimates of Harrison et al (1995) and Goldin and van der Mensbrugghe of change in GDP for selected countries

Name in Harrison et al.	Harrison et al. change % of GDP [a] 1991		RUNS change % of GDP 1992	Name in RUNS
	Short run	Long run		
Republic of Korea	0.6	3.1	1.3	Other upper income Asia
Indonesia	0.4	2.6	0.1	Indonesia
Malaysia	1.3	12.9	1.3	Other upper income Asia
Philippines	0.2	7.1	1.3	Other upper income Asia
Thailand	0.9	16.5	1.3	Other upper income Asia
China [1]	**0.0**	**0.6**	**-0.2**	**China**
South Asia	0.2	2.5	0.7	India
South Asia	0.2	2.5	0.0	Other lower income Asia
Brazil	0.1	1.1	0.3	Brazil
Mexico [1]	**0.1**	**0.8**	**-0.5**	**Mexico**
Other Latin America [2]	0.2	1.8	0.0	Other Latin America
Middle East and North Africa	-0.1	0.4	-0.3	Maghreb
Sub-Saharan Africa[3]	-0.1	-0.9	-0.3	Other Africa[4]

[1] **Bold** indicates that there is a major difference between model estimates (sign is reversed) [2] Excludes Argentina; [3] Excludes South Africa; [4] Excludes Nigeria and South Africa

Note: There is a small discrepancy in calculating the percentages in the Harrison et al model. The model used welfare measures in PPP in 1992 whereas the GDP figures are from 1991.

Sources: Harrison et al. op. cit. Tables 10 and 13; Goldin and van der Mensbrugghe op.cit. Table 4; and UNDP. 1994. Human Development Report. Table 18.

31. From table 1, it is evident that the one-time effects of the Uruguay Round on growth in the developing countries are very small. In fact, even the signs change for some countries, depending on the different assumptions made. Such findings suggest that quantified estimates of changes in poverty as a consequence of the Uruguay Round should be treated with extreme caution.

32. As pointed out above, it is assumed in the present exercise that the effects of the Uruguay Round on poverty are transmitted through the Round's effects on economic growth. The poverty line is set for present purposes at US$1

[a] All growth rates quoted in this study are one-time effects. They should not be confused with annual GDP growth rates.

per capita per day in 1985 purchasing power parity (PPP) terms [9]. The model that has been developed and utilized for the exercise regresses the natural logarithm of GDP per capita and an income inequality variable (Gini-coefficient) on the share of poor in the total population. The data are taken from household surveys of 41 developing countries. [10]

33. Since the quantified estimates of the effects of the new trade regime on growth in the developing countries are very small, it is natural that the effects on poverty should also be modest. According to the regression findings on poverty, a $1 increase in per capita income will cause the proportion of absolute poor in the population to decline by $25.6/GDP_{CAPITA}$ [11] percentage points, assuming no change in income distribution (see the Technical Annex for details). As shown in table 2, therefore, regressions utilizing the long-run model of Harrison et al suggest that poverty will be reduced by 15.8 million people once all the effects of the new trade regime have worked themselves through. This amounts to 0.5 per cent of the total population of the developing world, or to a 1.4 per cent reduction in poverty.

Table 2

Summary of the effects of Uruguay Round on poverty

Country/Region	Rural-Urban-North-South (RUNS) model			Harrison et al (1995) model					
	Change in poor (000)	% of population	Change in poverty %	Short run (000)	% of population	Change in poverty %	Long run (000)	% of population	Change in poverty %
China	602	0.05	0.38	-120	-0.01	-0.08	-1,656	-0.14	-1.04
Other East Asia	-526	-0.16	-0.84	-416	-0.13	-0.66	-5,544	-1.68	-8.80
India	-1,614	-0.18	-0.26	-484	-0.05	-0.08	-5,766	-0.64	-0.92
Other South Asia	0	0.00	0.00	-149	-0.05	-0.24	-1,777	-0.64	-2.85
Middle-East & North Africa	48	0.07	2.74	17	0.03	0.97	-63	-0.09	-3.61
Sub-Saharan Africa	149	0.08	0.15	70	0.04	0.07	269	0.14	0.26
Latin America	-9	0.00	-0.01	-129	-0.03	-0.12	-1,213	-0.32	-1.17
Total	-1,351	-0.04	-0.12	-1,213	-0.04	-0.11	-15,750	-0.47	-1.41

34. Based on the long-run model of Harrison et al, the largest absolute reduction in poverty is expected to occur in India. In that country, poverty could decline by 5.8 million persons, which corresponds to 0.6 per cent of India's population. The highest percentage change in poverty is anticipated to occur in East Asia, where 1.7 per cent of the population could be lifted out of poverty as a result of the Uruguay Round. Poverty is also expected to be reduced in the other subregions, with the exception of sub-Saharan Africa. In that

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[9] For instance, based on a recent household survey in Kenya it was estimated that about half of that country's population was living under this poverty line in 1992 (S. Chen, G. Datt and M. Ravallion: *Is poverty increasing in the developing world?*, Review of Income and Wealth, December 1994 including the statistical addendum).

[10] Chen et al, op. cit.

[11] GDP_{CAPITA} is the gross national product per capita measured in US dollars in 1985 purchasing power parity.

subregion, it is anticipated that the number of poor could increase by 269,000 people, or 0.1 per cent of the population, as a result of changes from the Uruguay Round. [12]

D. Conclusions

35. The Uruguay Round is expected to lead to an expansion of trade as well as to a shift in the patterns of trade. The size and pattern of trade flows will differ in various ways from the present. However, the net effects on economic growth and poverty are likely to be very small. It is estimated that there could be a net 1.4 per cent decrease in absolute poverty over the long run in the developing world as a consequence of the Uruguay Round. In Sub-Saharan Africa, however, poverty could increase by about a quarter of a million people as a result of the Round.

36. By intensifying the trend towards competitiveness in global markets, the Uruguay Round will generate both gains and losses across regions, nations, and groups within countries. International competition on price and quality is likely to benefit a substantial number of countries in Asia and Latin America. It will prove detrimental to low-income countries, particularly in Africa, that are less able to compete. Those countries risk losing market share and becoming marginal suppliers. As a result, their poverty could mount.

37. The benefits of trade liberalization, moreover, cannot be disassociated from the costs of adjusting to new patterns of production. There could be losses of jobs and consequent poverty increases in the short and medium term as a result of production losses due to a switch to imported consumer goods. Such losses are likely to be offset only in the longer term, following investment in the production of other goods in response to the reduced trade barriers of other countries. The intertemporal implications of the Uruguay Round could thus be that poverty will grow in many countries before it declines.

38. Low-income developing countries that are net food importers are likely to be significantly affected by price rises for temperate agricultural imports as a result of the Uruguay Round Agreement on Agriculture. Some could experience a terms-of-trade decline stemming from the combined effects of (a) erosion of preference margins on tropical agricultural products and (b) price rises for temperate agricultural imports. In Sub-Saharan Africa, for instance, the erosion of preference margins would hurt farm labourers and small producers of coffee and cocoa, while price rises for basic foodstuffs would affect the consumption needs of food-deficit households.

39. Until less competitive, generally low-income countries can adjust to the new trade environment, appropriate safety net provisions will be necessary for groups made vulnerable and poor on account of the Uruguay Round. The international community can support such efforts by facilitating improved market access and through increased debt relief, food aid and ODA for human resources development and poverty alleviation. [13]

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[12] The estimates for Sub-Saharan Africa do not include Nigeria and South Africa.

[13] On the question of ODA for poverty alleviation, see UNCTAD, "International development cooperation for poverty alleviation: aid effectiveness", TD/B/CN.2/14, 1995.

II. EFFECTS ON THE LIVELIHOOD OF THE POOR OF THE PRODUCTION OF LABOUR-INTENSIVE GOODS FOR EXPORT, DIVERSIFICATION OF EXPORTS AND MARKET ACCESS OF SUCH GOODS

A. General background

40. Item 3 of the provisional agenda of the third session of the Standing Committee on Poverty Alleviation calls for, among other things, an "analysis of the effects on the livelihood of the poor of ... diversification of exports, particularly of labour-intensive goods, and market access of such goods". With the aim of gaining more knowledge and exchanging information among countries on this issue, UNCTAD organized an interregional workshop entitled "Poverty Alleviation through International Trade" that was held in Santiago, Chile, during 10-13 January 1995. The workshop was supported by the UNDP and Dutch and Swiss governments, and was hosted by the Government of Chile. The objective of the workshop was to review and discuss successful national experiences and, on that basis, propose policy guidelines for developing countries on how to diversify and increase labour-intensive exports production in ways that will improve the livelihood of the poor. The workshop focused on national experiences and policies to enhance the role of non-traditional agro-export production and export-oriented small and micro manufacturing enterprises in alleviating poverty.

41. In the choice of sub-sectors to focus on, the formal urban economy was deliberately excluded. That is because only a very small fraction of the labour force employed in the formal sector falls under the poverty line. [14] The production of traditional tropical commodities with low income elasticities of demand was likewise not dealt with. Such production does not correspond to the wording of item 3 of the provisional agenda in which "diversification of exports" is emphasized; besides, the prospects of sustained export growth for traditional tropical agricultural commodities in the foreseeable future are not encouraging. In reducing the list of possible sub-sectors to a manageable number for in-depth analysis, the following criteria were adopted for the Santiago workshop: (a) the agricultural sub-sector would deal with non-traditional, diversified exports, including value-adding processing activities; (b) both the agricultural and manufacturing sub-sectors would be characteristically labour-intensive and employ mainly unskilled workers on a regular or seasonal basis; (c) both sub-sectors would provide opportunities for advancement that would allow ambitious industrial workers and agricultural smallholders to rise out of poverty; and (d) there would be sufficient income elasticities of demand in importing countries for continued export growth in both sub-sectors.

42. With the above criteria in mind, the workshop focused mainly on the production of (a) fresh and preserved vegetables and fruits for export and (b) footwear and knitwear for export. It is hard to establish with any degree of precision the exact size of these export sub-sectors. Such data as exist tend to be fragmentary, for instance, with respect to the proportions of small versus

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[14] As of the late 1980s, for instance, the percentage of formal sector employees with incomes placing them in the bottom three deciles of the income distribution was 3.5 per cent in the case of Peru and 1.6 in the case of Cote d'Ivoire. See P. Glewwe and D. de Tray, "The poor in Latin America during adjustment: a case study of Peru", Living Standards Measurement Study (LSMS) Working Paper No. 56, World Bank, Washington, D.C., 1989, and "The poor during adjustment: a case study of Cote d'Ivoire", LSMS Working Paper No. 47, World Bank, Washington, D.C., 1988.

large farmers and manufacturers engaged in such production. [15] In the aggregate, however, the sub-sectors appear to be substantial and still growing. World trade in 1988/89 in fresh vegetables amounted to $16 billion, with developing country growth in that trade averaging 4 per cent annually between 1980 and 1989; the corresponding figures for processed fruit were $7 billion and 8.9 per cent average annual growth. [16] The value of world trade in footwear in 1990/91 totalled $27 billion, of which $11 billion corresponded to developing country exports which grew at an annual rate of 9.9 per cent between 1980 and 1991. For knitwear the corresponding figures were $39 billion, $17 billion and 12 per cent, respectively. [17] Generally speaking, footwear and knitwear are export areas where small and medium enterprises play a substantial role. [18]

43. The significance of the above sub-sectors to development and poverty alleviation differs among countries and regions, with manufacturing exports more important for Asia, non-traditional agriculture for Africa, and both significant in the case of Latin America and the Caribbean. In sub-Saharan Africa, for instance, non-traditional agro-exports by the 1990s were third in value behind coffee and cocoa but ahead of tea, cotton and tobacco. [19] Their share of country exports has risen rapidly in a number of African and Latin American countries. In Zimbabwe, nontraditional agro-exports rose from less than $ 1 million in 1985 to over $ 50 million in 1994, [20] while in Guatemala -- where smallholder contract farming is very common -- nontraditional agro-exports rose from $2.7 million in 1978 to $80 million in 1992. [21] Likewise, clusters of micro and small-scale

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[15] Estimates of the shares of small- and medium-sized enterprises (SMEs) in total export earnings exist for certain developing countries, but these estimates are not disaggregated by small- versus medium-sized enterprises. Such estimates as exist include the following: Republic of Korea, 40 per cent; Taiwan, Province of China, 56 per cent; China, 50 per cent; and for the developing countries of East Asia as a whole, 40 per cent. See C. Hall, "The globalization of economic activity and SME development in the Asian economies; evidence and policy issues", paper presented at the Twenty-first International Business Congress, Jakarta, 18-21 September 1994.

[16] See UNCTAD, Handbook of International Trade and Development Statistics, United Nations, New York and Geneva, 1991.

[17] See UNCTAD, UNCTAD Statistical Yearbook, United Nations, New York and Geneva, 1994.

[18] Among Mercosur countries (Argentina, Brazil, Paraguay and Uruguay) trade, for instance, the production share of small and medium-sized enterprises in textiles, clothing and footwear is over 50 per cent of all production in those sectors. See F. Gato and C. Ferraro, "Internacionalización de las pequeñas y medianas empresas Argentinas en el MERCOSUR: exportaciones y modalidades de cooperación empresarial", CEPAL LC/BUE/R. 209, December 1994, p. 14.

[19] See M. Watts, "Life under contract: contract farming, agrarian restructuring, and flexible accumulation", in P. Little and M. Watts, Contract Farming and Agrarian Transformation in Sub-Saharan Africa, University of Wisconsin Press, Madison, 1994, p. 39.

[20] See S. Movo,"Poverty alleviation through agricultural diversification and exports in Zimbabwe: 1980-1994", paper prepared for the UNCTAD-organized Workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995, p.12.

[21] See J. Fox, K. Swanberg and T. Mehen, "Agribusiness assessment: Guatemala case study", USAID, Washington, D.C., March 1994, p. 26.

enterprises (see further on) in Asia and Latin America have accounted for a growing share of the exports of some of the countries in those regions. A small enterprises cluster in Tiruppur, near Madras, India, for instance, exported in 1993 $374 million worth of cotton knitwear (as compared with $12 million in 1986); a cluster of small-scale shoemakers in Sinos Valley, Brazil saw its share of world exports in the leather shoe industry rise from 0.5 per cent in 1970 to 12.3 per cent in 1990, grossing in 1991 nearly $900 million in exports. [22] In the Republic of Korea, the subcontracted output of micro-enterprises engaged in indirect exports production rose from 18 per cent in 1980 to 85 per cent in 1990 as a result of large Korean firms attempting to keep down labour costs, reduce the risk of strikes and thereby hold on to market-share and compete effectively with lower-cost Asian competitors. [23]

44. In helping integrate developing countries into the international trading system, the Uruguay Round agreements are likely further to enhance the effects of exports production on the livelihood of the poor. The increased access to developed country markets consequent upon reduced trade barriers is expected to induce developing countries in the aggregate to augment their export capacity in these and other sub-sectors where low labour costs remain a comparative advantage. For example, with developed country tariffs on leather, rubber, footwear and travel good imports expected to fall by 32 per cent as a consequence of the Uruguay Round, it is estimated that imports of those goods in the developed countries will rise by 4.3 per cent. [24] Likewise, tariffs are expected to be reduced in the developed countries by 16 per cent for textiles and clothing. [25] More importantly for some Asian countries, the gradual dismantling of the MFA quotas ought to yield substantially improved market access for their textile and clothing exports. [26] As for non-traditional agro-exports, tariffs on fruits and vegetables are scheduled to decline by 28 per cent in the EU, 39 per cent in the United States, and 33 per cent in Japan. [27] On the other hand, it

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[22] See, respectively, P. Swaminathan and J. Jeyaranjan, "The knitwear cluster in Tiruppur: an Indian industrial district in the making?" paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995; and H. Schmitz, "Small shoemakers and Fordist giants: tale of a supercluster", IDS Discussion Paper No. 331, University of Sussex, Brighton, September 1993.

[23] See M. Cho, "Interfirm networks: the foundation of the new globalizing economy of South Korea", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade", Santiago, 10-13 January 1995, Table 3.

[24] See M. Abreu, "Trade in manufactures: the outcome of the Uruguay Round and developing country interests", paper presented at the World Bank conference on The Uruguay Round and the Developing Economies, Washington, D.C., 26-27 January 1995, Table 2.2 and p. 31.

[25] Ibid, Table 2.2.

[26] See R. Blackhurst, A. Enders and J. Francois, "The Uruguay Round and market access: opportunities and challenges for developing countries", paper presented at the World Bank conference on The Uruguay Round and the Developing Economies, Washington, D.C., 26-27 January 1995, p. 23.

[27] Tariff reductions for fruits and vegetables under the Uruguay Round contrast strikingly with the limited liberalization achieved in OECD countries in highly protected commodities such as sugar and dairy products. See GATT, "The outcome of the Uruguay Round and African countries", note for the OAU International Conference on the Uruguay Round, Tunis, 24-27 October 1994, Table 11.

should be noted that on export products of most interest to developing countries, tariffs will be cut but will generally remain at higher levels than those applied to products traded mainly among developed countries. Moreover, tariff escalation will be reduced but not significantly.

45. The occupational issues covered by the workshop on Poverty Alleviation through International Trade have a bearing on the subject of labour standards that was raised by some countries during the Uruguay Round negotiations. [28] Whatever the validity of this concern, it threatens developing countries precisely in the product areas where their comparative advantage is greatest. While pay and benefit conditions on smallholder farms or in micro-enterprises in the urban informal sector fail to match those of modern formal-sector enterprises in developed or even developing countries, those conditions will be overcome through development in which increased trade would play an essential role.

B. Small-scale, export-oriented manufacturing enterprises

1. Participation in international trade

46. In seeking to gain a foothold in export markets, the main challenge faced by export-oriented small-scale manufacturing enterprises is as much one of marketing as of production. There are many situations where the product does, or with quality enhancement could satisfy foreign buyers, but the link to importers is not easy to achieve. A major impediment is that most transactions in international markets occur on a large scale, thus creating a size mismatch for small-scale enterprises. [29] Other handicaps include, by international standards, low-quality production, as well as in many cases limited access to financing. [30] Barriers of culture, language and business practice also complicate the task. In cases where export market access is achieved, maintaining a presence is often difficult due to rapidly changing demand and technological innovations. [31]

47. Access to international markets by small-scale enterprises is either achieved directly or through subcontracting arrangements. Direct access may put the small-scale sector in competition with large firms, whereas subcontracting

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[28] In his concluding remarks at the Uruguay Round in Marrakesh, the Chairman of the Trade Negotiations Committee noted that some participants had requested that the World Trade Organization examine the relationships between trade and various domestic policies, including labour standards.

[29] See A. Berry, "The small-scale export sector as a route to poverty alleviation", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995, p. 17.

[30] See, for instance, M. Irigoyen and M. Bastos, "Exportaciones de la micro y pequeña industria: un reto para las ONGs", Grupo PAMIS, Lima, 1992.

[31] Changes due to technological and consumption changes that are often structural and irreversible in nature are frequently not apparent at the grassroots level for many years. The effects are keenly felt but the causes may be hard to pin down, e.g. increasingly hard-to-place products, falling world prices for the product; disillusionment; etc.. See P. Tiffen, "Vertically integrated producer-consumer marketing chains: re-inventing comparative advantage for the poor", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995, p. 3.

represents a complementary way for small and large enterprises to work. In cases where access is direct, the intermediation function is handled by trading companies, small traders, public institutions, international buyers, or though direct contact between the small-scale enterprise and the final buyer. Such arrangements consist generally of "spot" market transactions between atomistic buyers and sellers. In some cases, the products are specialty items that are manufactured in accordance with the specifications of the buyers. In other cases, they result from production that is in excess of domestic market absorbtion and is therefore exported to neighbouring countries on the basis of very low prices rather than quality. In either case, transaction costs tend to be high because of difficulties in identifying intermediaries and because the orders are normally small. Informal linkages among extended ethnic communities that transcend national boundaries have helped reduce transaction costs. Export arrangements in such cases are often made via a business trip abroad, or a friend or agent based abroad. [32]

48. Subcontracting arrangements, on the other hand, form part of more systemically integrated vertical production and marketing systems. For instance, in countries where the technologies and know-how of transnational corporations have been internalized by domestic large exporting firms, outsourcing to small enterprises has been pursued with the objective of replacing hitherto imported intermediate inputs with domestically produced inputs for incorporation in exported manufactured goods. [33] Subcontracting chains can be long and involve informal sector micro-enterprises, as in piece work arrangements.

49. Outsourcing relationships may feature either monopsony dependence on one contractor or arms-length arrangements with several-- the latter being more common when small-scale enterprises become firmly established and various contractors emerge on the scene. Micro and small-scale enterprises have benefitted from such arrangements by acquiring new production opportunities, reduced marketing responsibilities and, in some cases, working capital, skills-upgrading and the transfer of technological and business know-how from contractors. In turn, the advantages of subcontracting to the contractor are lower prices and greater flexibility of production.

50. In certain subsectors such as hosiery and footwear, transnational corporations have subcontracted virtually all labour-intensive production activities to small as well as medium-sized enterprises in low-wage countries, while retaining little else than their trade marks, design facilities and

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[32] An example is the extended Chinese community of Indonesia. See B. Levy, with contributions from A. Berry et al, "Can intervention work? The role of Government in SME success", World Bank Policy Research Department, Washington, D.C., February 1994, p. 11. Another example is the export of footwear from Trujillo, Peru to the United States through Peruvian family and community connections who reside in the United States. See A. Vargas, "Conglomerado de micro y pequeñas empresas de calzado de Trujillo y programas de apoyo de FONCODES", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995, p. 23.

[33] For instance, see M. Cho, "Interfirm networks: the foundation of the new globalizing economy of South Korea", op. cit., pp. 8-12.

retailing networks in the home country. [34] On the other hand, cases of local subcontracting by the developing country-based affiliates of transnational enterprises, in particular "maquilas" and enterprises located in export processing zones (EPZs), are generally uncommon. [35] These enclave assembly-operations normally import the raw materials and inputs that they need, or sometimes bring with them their own national suppliers to the host country. [36] Such practices have been aided and abetted by rules of origin which in cases where the preference margin is small may impose higher transaction or production costs than if production were subcontracted locally. [37] Linkages, however, have evolved in some of the more industrialized of the developing countries where the gap in quality production between firms inside and outside the export processing zones has narrowed. [38]

51. Besides instances of individual small enterprises that have become involved in exports as a result of subcontractual arrangements or direct contacts with import agents, there are important instances of clustered small enterprises that have proved successful in gaining access to international markets. In such situations, networking among clustered small firms has given them an important competitive advantage: flexible specialization.

52. The concept of flexible specialization refers to the information- and resource-sharing and complementarity of activities that can evolve between small-scale enterprises in close proximity to each other. When such groupings are characterized by sectoral as well as geographical concentration, there have been gains in efficiency, flexibility, specialization and frequently innovation, which are essential for competing beyond local markets. [39] For instance, where import consignments have been small and uneconomical due to cumbersome import procedures, pooling arrangements by clustered small enterprises have helped

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[34] See ILO, Recent Developments in the Leather and Footwear Industry: Report I, Sectoral Activities Programme, Fourth Tripartite Technical Meeting for the Leather and Footwear Industry, Geneva, 1992, p. 25.

[35] See, for instance, World Bank Industry Development Division, "Export processing zones", Policy and Research Series 20, Washington, D.C., 1992. By way of example, it may be noted that Mexico's content in the maquiladora industry amounted to only 1.8 per cent in 1993. It should be noted, however, that some interior states of Mexico have local contents of up to 6 per cent while border locations average less than 1 per cent. At the same time, it should be pointed out that virtually none of this outsourcing has been to micro or small-scale enterprises. See I. Aguilar, "subcontracting in the Mexican industry: recent challenges and opportunities", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995, pp. 4-5.

[36] As an example of the latter, see M. Kenney and R. Florida, "Japanese maquiladoras: production organization and global commodity chains", World Development, Vol. 22 No. 1, 1994, pp. 27-44.

[37] See S. Page and M. Davenport, "World trade reform: do developing countries gain or lose?", Overseas Development Institute, London, 1994, p. 15.

[38] See UNCTAD, "The role of small- and medium-sized enterprises in export development", TD/B/WG.7/3, 23 January 1995, p.24.

[39] See H. Schmitz, "On the clustering of small firms", IDS Bulletin, vol.23, No.3, July 1992.

reduce such costs by as much as 25 per cent. [40] Collective, decentralized marketing-support institutions, such as local industry associations, chambers of commerce, and ties to local governments have also often played an important role in providing necessary information, building technological capacity and developing contacts with foreign buyers. [41] Low labour costs in labour-intensive operations have provided these enterprise clusters with a major competitive advantage, especially in cases of clusters based in rural towns or peripheral, marginal urban areas where workers, once trained, are less likely to leave to take up better-paying work elsewhere. [42]

53. Most clusters originally sought to establish themselves locally and focus on producing for local markets. Only when local markets became saturated did some clusters seek to expand their sales nationally and eventually abroad. Export drives were initially directed at neighbouring countries and based on price-based competition. [43] Subsequently, size differentials between firms in the clusters tended to grow and vertical linkages to dominate as foreign buyers arrived on the scene and the transactional environment for exporting in global markets became increasingly complex. [44]

2. Impact on the livelihood of the poor

54. Employment and entrepreneurship in small-scale, export-oriented manufacturing enterprises have generally been beneficial to the livelihood of the poor. Labour intensive jobs have been provided and the skills of workers have often been raised as a result of the training and technical assistance supplied to make the quality of output more internationally competitive. [45] Pay levels in

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[40] See UNCTAD, "The role of small- and medium-sized enterprises in export development", op.cit., p.13.

[41] An example of a successful industry association is the Canera de Calzado (the Mexican footwear organization) which provides footwear firms that are grouped together in associations with a range of services as well as financing through credit unions. It has also set up a training institute in Guadelajara. See ibid, p.22.

[42] See, for instance, E. Klein, "How to make development happen through clustering of small and medium size enterprises", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995, pp. 5-6.

[43] Examples include the exportation of footwear from the Peruvian cluster of El Porvenir, Trujillo, to Bolivia and Mexico, and the export of cycle parts from India's Ludhina cluster to Indonesia. See, respectively, J. Tavara, "From survival activities to industrial strategies: local systems of inter-firm cooperation in Peru", DPhil thesis, University of Massachusetts, Amherst, 1993; and M. Tewari, "Understanding the organization of production: the State, intersectoral linkages, and the historical conditions of accumulation in Ludhina's industrial regime", Center for International Studies Working Paper, Massachusetts Institute of Technology, Cambridge, July 1993.

[44] See B. Levy, op. cit., p.18.

[45] For instance, in subcontracting arrangements in Thailand in the production of motorcycles and refrigerators, subcontracting in some cases has provided worker training as well as assistance in quality control to their subcontractors. See A. Sibunruang, "The employment effects of multinational enterprises in Thailand", Multinational Enterprises Programme Working Paper No. 54, ILO, Geneva, 1988.

turn have often risen commensurately with the increase in human capital.

55. The extent of the positive impact on the livelihood of the poor has varied, however, depending on the gap between wages paid and alternative income opportunities. In extreme cases where the hired labour has come from an unemployed pool or from disguised unemployment, virtually the entire wage bill has been a net gain to the workers and their families. [46]

56. Generally speaking, however, the pay, benefits and job security of workers in the micro and small-scale sector have remained below those of employees in the formal sector. This has been particularly so in cases of long subcontracting chains in which the remuneration of the workers in question must be sufficiently small for their collective labour to financially support the multi-layered contracting system and still be competitive with factory labour costs in the same developing country. [47] Moreover, the creation of more jobs through exports has not necessarily meant of itself that wages also rise. Since wage levels largely depend upon the supply of workers available to the sector, wages for unskilled workers can persist at low levels since the pool of labour may be readily augmented through in-migration from depressed surrounding areas. [48]

57. A distinction may be made between workers and their employers in certain enterprises. In less-small enterprises, workers are likely to be poor or very poor, while the owners are typically less poor, and sometimes relatively well off. Micro-enterprises, on the other hand, tend to be family businesses that hire few if any workers -- and those workers are often related to or otherwise trusted and assisted by the employer. In clustered agglomerations of enterprises, the socio-economic distinctions between workers and owners are often blurred. It is quite common for an apprentice worker later to launch his own small business. Moreover, such clusters are often distinguished by social networks where workers and entrepreneurs are neighbours related by ties of kinship, or form networks drawn together by a communal experience such as a long collective struggle to gain security of urban land tenure. [49] Shared hardship and suffering, in fact, often help explain the ethos of hard work, savings and entrepreneurship found in clustered small enterprise zones. [50] However, socio-cultural networks can change with time. Shared social identities have sometimes eroded as export-oriented

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[46] See A. Berry, op. cit., pp. 24-25.

[47] See, for example, R. Ofreno, "Labour market, labour institutions and economic growth in the Philippines", paper presented at the ILO-sponsored workshop on Labour Institutions and Economic Development, Bali, Indonesia, 4-6 February 1992, p.72.

[48] See, for example, H. Schmitz, "Small shoemakers and Fordist giants: tale of a supercluster", op. cit., pp. 30-31.

[49] See, for instance, F. Villaran, "Small-scale industry efficiency groups in Peru", in B. Spath, editor, Small Firms and Development in Latin America: The Role of Institutional Environment, Human Resources and Industrial Relations, International Institute for Labour Studies, Geneva, 1993; and A. Vargas, "Conglomerado de micro y pequenas empresas de calzado de Trujillo y programas de apoyo de FONCODES", op. cit, p. 11-13.

[50] See K. Nadvi and H. Schmitz, "Industrial clusters in less developed countries: review of experiences and research agenda", IDS Discussion Paper 339, University of Sussex, Brighton, January 1994, p. 33.

enterprises mature, differentiation within the cluster increases, and firms shift their emphasis from horizontal to vertical linkages of doing business.

C. Non-traditional agro-export production and processing

1. Diversification and participation in international trade

58. Diversification at the farm level, in processing and in trade can be an important vehicle for augmenting the working opportunities and incomes of the rural poor. Non-traditional agro-export crops, in this respect, have been characterized by rising and seemingly elastic foreign market demand, high labour-intensity, and contract farming with smallhold producers. [51/] The promotion of non-traditional agro-exports first became a matter of policy in the early 1980s in response to falling market prices for traditional exports, rising foreign debts and declining foreign exchange reserves in much of Africa and Latin America. [52/]

59. Export trade in non-traditional products has been based on both formal and informal marketing arrangements. Informal arrangements have consisted of exports through family or ethnically-related agents or firm-owners abroad. [53/] Formal arrangements typically consist of foreign-owned affiliates and joint venture undertakings that have arm-length contracts with manufacturing and distribution companies abroad. While the latter are sometimes criticized for transfer-pricing practices and for not training local entrepreneurs, they are nonetheless major seasonal employers of the landless poor.

60. Smallholders often comprise the pyramid base of vertically-integrated systems of non-traditional agro-export production, processing and marketing. Contract farming arrangements involving a thousand smallholders or more are not uncommon. In such cases, contractors give smallholders access to inputs, production technology and markets, in exchange for which smallholders provide contractors with an assured source of raw materials supply.

61. Contract farming arrangements are often the result of political and social as well as economic considerations. [54/] In some countries, the land tenure system

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[51/] For some 1970s and 1980s Latin American examples of the significance of non-traditional agroexports in employment generation, see ECLAC, Changing Production Patterns with Social Equity, UN Publication Sales No. E.90.II.G.6, Santiago, 1990, in particular Box IV.2 "Colombia: flower exports" and Box V.3, "Incentives for non-traditional exports in Costa Rica".

[52/] For instance, see in the case of Latin America: B. Barham, M. Carter., E. Katz and R. Schurman, "Nontraditional agricultural exports in Latin America", Latin American Research Review, Vol. 27 No. 2, 1992, pp. 43-82.

[53/] See S. Jaffee and J. Morton, "Africa's agro-entrepreneurs: private sector processing and marketing of high-value foods", AFTES Working Paper No. 15, World Bank, Washington, D.C., September 1994, p. 71.

[54/] For instance, in Ghana where most of the land surrounding pineapple plantations is still under the indigenous tenure system, estates must usually utilize outgrowers to expand exports. In The Gambia, on the other hand, the government has intervened in the land market to award large concessions to agroexport firms, with the result that the importance of smallholders in horticultural exports has declined since the late 1980s. See P. Little, "Smallholder production and

and national development policies ensure that the farming is done by smallholders. [55] Fearful of land expropriations and militant labour strikes, moreover, transnational firms under certain circumstances have contracted smallholders as an alternative to, or in addition to developing plantation-style agriculture. [56] They have also sometimes contracted smallholders in different regions in order to reduce supply risk failure through spatial diversification. The fundamental comparative advantage of smallholders, however, lies in their cheap and efficient labour. For one thing, smallholders do not value family labour at market prices. Moreover, those that hire a few workers tend to select and manage them more carefully than is possible on large estates. Contracting, in short, has proved economically important particularly in the cultivation of crops that are highly labour intensive and not suited to mechanized farming. [57]

62. The incorporation of smallholders into non-traditional agro-exports production has often been facilitated through the physical infrastructure and institutional support provided by governments. [58] Local representative farmer organizations, such as cooperatives, have also sometimes played an important role in making smallholders competitive with large farmers. They have helped reduce the transaction costs of contractors by providing direct access to local farm leaders, and by helping improve the coordination of input delivery, production and marketing activities. [59] Federations of smallholders have also in some instances carried out research to improve the quality of farmers' products, and

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marketing of 'non-traditional' commodities: the social and economic implications", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995.

[55] In addition to the example of Ghana above, another country example of smallholder preservation as a matter of policy is provided by Sri Lanka. See USAID Center for Development Information and Evaluation, "Generating broad-based growth through agribusiness promotion: assessment of USAID experience", USAID Program and Operations Assessment Report No. 9, Washington, D.C., November 1994, p. viii.

[56] See P. Little, "Smallholder production and marketing of 'non-traditional' commodities; the social and economic implications", Op. Cit.

[57] In Kenya, for instance, a joint venture between a private Kenyan firm and a French company was set up in the 1980s to export canned green beans to France. The processing operation has relied on raw material supplies from some 20,000 resource-poor smallholders in Western Kenya with whom the joint venture has developed a contract farming arrangement. The scheme has featured the supply of production inputs, continuous technical support and crop policing by extension agents hired and trained by the joint venture company. See S. Jaffee, "Enhancing agricultural growth through diversification in sub-Saharan Africa", in World Bank, Agricultural Diversification, World Bank, Washington, D.C., 1992, p.75.

[58] For instance, under a non-traditional agroexport programme in Lam Nam Oon, the Thai government has encouraged contract farming by developing an irrigation infrastructure, establishing an extension system and helping to attract private investment into the area. See D. Dolinski, "Contract farming at Lam Nam Oon: an operational model for rural development", East Asian Institute, Columbia University, New York, 1992. See also D. Glover, "Increasing the benefits to smallholders from contract farming: problems for farmers organizations and policy makers", World Development, vol. 15, No. 4, 1987, pp. 441-448; and

[59] See, for instance, K. Kumar, J. Lieberson and E. Miller, "An assessment of USAID's agribusiness program: Sri Lanka case study", USAID, Washington, D.C., 1994, pp. 20-21.

have improved the members' earnings by exporting those products. [60] In addition to providing links between smallholders and processors and exporters, such associations have helped bring together the latter with importers through trade fairs, information on external markets and technologies, and the creation of numerous contacts in foreign markets. [61] Alternative trade organizations (ATOs), such as Third World Information Network (TWIN), have also in some cases assisted smallholders by training them how to store, process and market their produce, and have provided outlets for their products in the industrialized countries. [62] In helping smallholders take over some of the functions of contractors, ATOs have helped raise the incomes and self-sufficiency of the smallholders concerned. [63]

63. Certain agribusinesses, on the other hand, have opted for plantation forms of production or contractual arrangements with only a few large farmers. Agribusinesses in these cases have usually been associated with private foreign direct investment, and have been characterized by vertically integrated systems combining input supply, farm production, processing, transport and marketing. [64] Such approaches have been especially suited to production and processing operations characterized by large economies of scale. They have also made it easier to achieve quality control, as in the application of fertilizers and

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[60] In Colombia, for instance, the Association of Guava Producers -- which was established in 1981 -- has sought to increase farmers' incomes from the exportation of processed guava paste, and has carried out research to diversify further in the fruit sector by developing an export product which combines the properties of panela and guava. US$ 1 billion of guava paste, which is produced by smallholders and processed by small-scale enterprises, is exported annually from Colombia. See N. Duran, "La agroindustria del ate o pasta de guayaba y la panela como factores de cambio para el alivio de la pobreza en Colombia", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995.

[61] An example is the Nontraditional Exporters' Guild of Guatemala. See J. Fox, K. Swanberg and T. Mehen, op. cit..

[62] TWIN is part of a worldwide network of companies and organizations in the industrialized countries which have their roots in church, solidarity, trade union and "green" movements. Their express aims are to assist poor and disadvantaged producers in accessing international markets, and they sometimes act as alternative brokers between the producers and the marketplace. TWIN Trading, for instance, acts both as a trading principal and as a representative agent for exporters, in which role it promotes the products of smallholder groups and negotiates which buyers. Some alternative trade organizations have significant sales capacity and expertise, e.g. Oxfam Trading has more than 500 retail outlets nationwide, which makes it one of the top ten largest retail chains in the United Kingdom. See P. Tiffen, "Vertically integrated producer-consumer marketing chains: re-inventing comparative advantage for the poor", op. cit., pp. 12-14.

[63] See, for example, B. Coote, The Trade Trap, Poverty and the Global Commodity Markets, Oxfam, Oxford, 1992, pp. 157-163; and P. Tiffen, "Vertically integrated producer-consumer marketing chains: re-inventing comparative advantage for the poor", op. cit.

[64] Not all processing plants are large-scale. With respect to small-scale processors of guava paste in Colombia for export, for instance, see N. Duran, "La agroindustria del ate o pasta de guayaba y la panela como factores de cambio para el alivio de la pobreza en Colombia", op. cit.; and M. Cortes, A. Berry and A. Ishaq, Success in Small and Medium-scale Enterprises: The Evidence from Colombia, Oxford University Press, 1987, pp. 187-189.

pesticides in ways that do not exceed the authorized residual thresholds of importing countries while at the same time satisfying foreign market demand for blemish-free products. Large farms, moreover, tend to have more ready access than smallholders systems to the refrigerated storage and handling facilities necessary for the post-harvest handling of perishable products. Finally, plantation farming has been viewed as one way of avoiding the risk of contract smallholders selling on the "spot" market and defaulting on the credit advanced to them by contract buyers in situations where demand of producers' output exceeds supply. [65]

64. In most cases, however, small versus large-scale farming has not had to be an either-or choice. Contract farming with smallholders represents a complementary or supplementary option for agribusiness firms to pursue, along with plantation or large-scale farming. For agribusinesses that cover a range of fruits and vegetables production, the labour-intensive harvesting of, say, snowpeas has been better suited to smallholders who have a comparative advantage in terms of cheap labour, whereas the harvesting of melons has been more efficiently carried out on large mechanized estates. The flexibility provided by smallholder contracting, moreover, has proved advantageous during periods when production output has to be rapidly stepped up in order to satisfy underutilized processing capacity or surging international demand. [66]

2. Impact on the livelihood of the poor

65. In attempting to assess the impact of the non-traditional agro-export industry on the livelihood of the poor, it is first of all important to make a distinction between smallholders and labourers. Some of the smallholders concerned may not to be from the bottom strata of the income distribution. Landless labourers working for either smallholders or large estates, on the other hand, are unambiguously poor.

66. The most striking aspect of the effect of non-traditional agro-export production on the livelihood of the poor is the labour-intensity of the work. Indeed, certain export vegetable crops use up to 400 work-days per hectare, whereas maize, for instance, requires only 60 work-days per hectare. [67] During peak seasonal periods of demand for labour, high rates of in-migration from neighbouring countries are not uncommon, during which times wages tend to increase locally. [68] This beneficial impact on the livelihood and incomes of the

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[65] See, for instance, M. Mukumbu, "Impact of export horticultural production on rural income growth and poverty alleviation in Kenya", paper prepared for the UNCTAD-organized workshop on Poverty Alleviation through International Trade, Santiago, 10-13 January 1995, p. 17.

[66] In the case of sub-Saharan Africa, for instance, see S. Jaffee, Contract farming in the shadow of competitive markets: the experience of Kenyan horticulture", in P. Little and M. Watts, eds., Contract Farming and Agrarian Transformation in Sub-Saharan Africa, op. cit.; and P. Little and C. Dolan, "Horticultural production and trade in the peri-urban area of Banjul, The Gambia", Institute for Development Anthropology, Binghamton, NY, 1993.

[67] See K. Swanberg, "An assessment of Ecuador's agribusiness portfolio", USAID, Washington, D.C., September 1994, p.40.

[68] See, for instance, D. Glover and K. Fusterer, Small Farmers, Big Business: Contract Farming and Rural Development, Macmillan, London, 1990.

rural poor can especially be important during the dry season when otherwise labour tends to be idled. [69]

67. Women are often as much engaged as men in the production and processing of non-traditional agro-export crops. In African communities in particular, women often are associated with vegetable cultivation in the indigenous economy and, therefore, are likewise engaged in the growing of vegetables and fruits for export. [70] However, most of the income tends to go to male heads-of-household in circumstances where the land belongs to them and input delivery systems are directed at them. An examination of women's wages on farms and in processing plants, for instance, showed that in one country they earn 73 per cent of men's wages. [71] Generally speaking, the situation of women is better in processing than in cultivation work. Processing income, since it is earned away from the farm, helps empower these women in their relations with husbands and fathers, as well as improve their subordinated role in rural social structures. [72]

68. Non-traditional agro-export production not only has distributional implications between men and women but also between the poor and non-poor. Export vegetables production, for instance, can have particularly favourable livelihood and distributional consequences for the rural poor. Indeed, the share of farmgate prices accruing to the bottom quartile of the national income distribution has in one documented case been above 60 per cent for some vegetable exports, as opposed to below 25 per cent for traditional export crops. [73]

69. The passing of land from smallholders to large farmers has in some cases augmented inequality and reduced the prospects of future generations of the rural poor to earn a livelihood from their own land. In other cases, however, diseconomies of large scale have resulted in crop expansion occurring horizontally through an increase in the number of smallholders growing the product on their existing plots rather than through net land accumulation by more efficient farmers. [74]

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[69] See, for instance, Development Alternatives, "Assessment of contract farming at Lam Nam Oon, Thailand: a combined effort of USAID and the Royal Thai Government", USAID, Washington, D.C., April 1994, pp. 46-47.

[70] See P. Little, "Smallholder production and marketing of 'non-traditional' commodities: the social and economic implications", op. cit., p.29.

[71] See, J. Fox, K. Swanberg and T. Mehen, "Agribusiness assessment: Guatemala case study", op. cit.

[72] See D. Glover and K. Fusterer, Small Farmers, Big Business: Control Farming and Rural Development, op. cit., p.137.

[73] See J. Fox, K. Swanberg and T. Mehen, "Agribusiness assessment: Guatemala case study", op. cit.

[74] For instance, the quadrupling of snowpeas production by Cuatro Pinos cooperative members in Guatemala between 1985 and 1992 occurred almost entirely trough an increase in the number of farmers growing the product. See International Food Policy Research Institute (IFPRI), "Guatemala: nontraditional export crops among smallholder farmers and production, income, nutrition, and quality of life effects", IFPRI, Washington, D.C., September 1992.

D. Conclusions and policy recommendations

70. The export-oriented industrial and agricultural sub-sectors examined in this report have proved capable of substantially stimulating employment and lifting incomes among the rural and urban poor. According to the findings of one study, for instance, a new full-time job equivalent is reported to have been created for each US$ 1,900 volume increase in non-traditional agro-exports generated. [24] Moreover, the share accruing to poor participants from the earnings of these sub-sectors has typically been much higher than their share otherwise would have been in national GNP. [25] Contract farmers and micro and small-scale enterprise entrepreneurs, though often having incomes that place them above the poverty line, have played a critical role in creating jobs for the relatives, kinsfolk and other poor persons whom they employ, and their activities have had positive local multiplier effects on neighbouring communities. Ambitious rural subsistence farmers and urban apprentice workers have had the opportunity eventually to become export-oriented smallholders or entrepreneurs in their own right, thereby increasing their incomes and rising out of extreme poverty.

71. A number of controversial issues, however, also mark the sub-sectors in terms of their impact on poverty. Rural women often do not obtain full compensation for their labour, and for lack of collateral and other factors have greater difficulty making the transition from labourer to owner and employer. Working conditions for labourers, moreover, are usually less attractive than in the formal sector of the economy. On balance, however, there is no denying that the sub-sectors have provided large numbers of the poor in certain countries with livelihoods, skills and opportunities for advancement which are an improvement over the alternatives that they realistically face.

72. Policy recommendations with respect to the sub-sectors concerned should aim at providing technical assistance and encouraging competitive and flexible export marketing structures. The principal aim at the macroeconomic level should be to phase out implicit and explicit taxes on exports, i.e. overvalued exchange rates as well as export taxes. In this connection, maintaining realistic exchange rates would clearly help eliminate the biases that can occur against exports, labour and other local inputs when currencies are overvalued. At the meso level, experience has shown that direct and indirect exports can be stimulated at the level of small farms and enterprises when governments take action to phase out export taxes. It also helps to treat all export activity in the same way, e.g. provide credits not only to large exporters but also small producers of intermediate exports. [26] Curtailing unnecessary red tape and liberalizing license requirements can also help reduce the transaction costs that particularly afflict the small-scale and informal sector.

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[24] See J. Fox, K. Swanberg and T. Mehen, "Agribusiness assessment: Guatemala case study", op. cit., table II.1 and p. 30.

[25] In the case of Guatemala, for instance, the share of the bottom quartile of the country's income distribution in the income generated from non-traditional agroexports is estimated to be about 20 per cent of the total, as compared to their 3 per cent share of Guatemala's GNP. See ibid, p.iv.

[26] See, for instance, Y. Rhee, B. Ross-Larson and G. Pursell, Korea's Competitive Edge: Managing the Entry into World Markets, John Hopkins University Press, Baltimore, 1984.

73. At the micro and local levels, governments can assist in both direct and indirect ways, in collaboration with the private sector and NGOs. For instance, local governments and decentralized public institutions may help finance and support sub-sector-specific associations and institutions devoted to foreign market intelligence and information services, technological support through research and development, quality enhancement assistance, technical training, guidance on packaging standards, the facilitation of export marketing services such as trade fairs; and other services meeting the test of externalities and economies of scale. National governments can also encourage small enterprises, e.g. through fiscal incentives, to become suppliers of competitively priced intermediate goods to export processing zone enterprises, thus gradually extending some of the privileges of export processing zone firms to those outside. [20] NGOs can "underwrite" early stage investments by targeting credits and technical assistance to export-oriented small manufacturers and farmers, thereby reducing the associated risks and exposure of new export ventures during initial "trial-and-error" learning years. The obtention of credits and services could be conditional on small enterprise owners respecting fair and reasonable labour standards and working conditions.

74. Public assistance is likely to be more beneficial for fledgling rather than already well-endowed export-oriented sub-sectors. It should seek to build upon what already exists rather than venturing into radically new directions. It ought not to be initiated in a top-down manner, but more deftly and in response to such justifiable needs as are identified by associations and NGOs representing the sub-sector groups in question. [21] In that way, assistance is likely to be more effectively channelled and utilized. The general aim, however, should be for all public assistance to be supplemented and eventually replaced by private initiatives once performance quality and reliability attain international expectations and the system in question reaches a relatively advanced level of development. After all, the objective is to provide entrepreneurs with the wherewithal to find markets and buyers for themselves, rather than attempt to substitute for efforts by putative exporters.

75. Official development assistance (ODA) could also be provided in various ways. At the meso level, debt conversion schemes could be adopted to enable developing countries to mobilize additional domestic resources in support of the small-scale export sector, thereby alleviating poverty and, at the same time, easing countries' balance of payments situation through augmented earnings and

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[20] The Government of Sri Lanka, for instance, has encouraged the establishment of domestic textile mills in order to furnish fabrics to firms in their export processing zones. See UNCTAD, "The role of small- and medium-sized enterprises in export development", op. cit., p. 24.

[21] Top-down approaches can often be sub-optimal. For instance, the engagement of parastatals in the production and marketing of non-traditional agroexport products would be unsuited for marketing-differentiated niche exports in competitive markets. See S. Jaffee and P. Gordon, "Exporting high-value food commodities", World Bank Discussion Paper No. 198, The World Bank, Washington, D.C., 1993, p. xiii. As for small-scale industrial exports, efforts at utilizing high profile national export agencies to support export efforts have often proved quite unfruitful. See B. Levy, Op. Cit., pp. 23-25.

reduced outflows of foreign exchange. [80] Donors can also play a more direct role by helping micro and small-scale enterprises in developing countries gain access to their markets. [81] Multilateral and bilateral funding agencies can furthermore take a part in strengthening the social dimensions of export-oriented schemes. For instance, outside funding support and technical assistance have often played a critical role in establishing successful contract schemes with smallhold farmers in non-traditional agro-export ventures. [82] More generally, there are a number of multilateral and bilateral agencies which have experience in investment promotion, such as feasibility studies and funding support for project development and start-up, which could help attract foreign investment in the sub-sectors concerned. Other ODA supported programmes that would be very helpful include stepped-up support for agricultural research institutes to conduct research on niche commodities with export-market potential; the financing of technical specialists from abroad to assist local entrepreneurs in export-oriented production and marketing; the creation of revolving credit schemes targeted at low-income women entrepreneurs; making available suitable machinery on an untied basis, etc.. Generally speaking, while aid agencies have long been involved in helping the poor to respond to changes around them through educational programmes and development cooperation projects, they have remained slow at recognizing that aid that focuses on small-scale, export-oriented entrepreneurs can be a useful tool to alleviate poverty. [83] An important outcome of such efforts would be to improve the livelihood prospects of large numbers of the rural and urban poor.

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[80] Following is a recommendation to governments made by UNCTAD's Standing Committee on Poverty Alleviation in its "Contribution to the World Summit for Social Development": "A practical and innovative approach for donors to assist developing countries to develop their export potential under conditions of high indebtedness could be to consider debt relief by using debt conversion schemes to mobilize domestic resources. Under the proposed approach, a certain proportion of the counterpart funds could be utilized in support of small-scale enterprises and smallholders engaged in production for export." See UNCTAD, "Report of the Standing Committee on Poverty Alleviation on its second session, held at the Palais des Nations, Geneva, from 25 to 29 July 1994", TD/B/41(1)/11, 18 August 1994, p. 26.

[81] For instance, the German Society for Technical Cooperation GTZ) has developed a bilateral programme with India called the Indo-German Export Promotion Project (IGEP) in which market information and participation in trade fairs is arranged for exporters of, among other things, shoes, leather goods and silk garments. This technical assistance in trade fair promotion, design and product development has served to build supplier relationships between Indian producers and German firms that has helped establish Indian firms in German markets. See S. Opitz, "Export promotion in the context of technical cooperation", Intereconomics, Vol. 29 No. 3, 1994, p. 139.

[82] For instance, Swiss Government aid has fostered and helped support a highly successful Guatemalan agricultural cooperative of 2,000 smallholders in Cuatro Pinos who grow snow peas for export. See USAID Center for Development Information and Evaluation, "Generating broad-based growth through agribusiness promotion: assessment of USAID experience", Op. Cit., Box 3, p. 21.

[83] See P. Tiffen, "Vertically integrated producer-consumer marketing chains: re-inventing comparative advantage for the poor", op. cit., p. 17.

Technical Annex

MODELLING THE EFFECTS OF THE URUGUAY ROUND TO GDP AND INCIDENCE OF POVERTY

1. The link between the effects of the Uruguay Round on poverty is through the effect of the Uruguay Round on GDP and the effect of GDP on poverty. The former link is established by the models of Harrison et al (1995) and Goldin and van de Mensbrugghe (1995). The effects of the change in GDP on poverty are estimated using data on household surveys from 41 developing countries [1].

2. Ideally, to analyse the change in GDP on poverty, one would need to have observations for several years in different countries. Unfortunately, such data are not yet available so only cross sectional analysis has been possible. The model developed and utilized in the present note is:

$$POOR = \alpha_0 + \alpha_1 \ln(GDP_{CAPITA}) + \alpha_2 GINI$$

where POOR is the per cent of population consuming less than US$ 365 per annum measured in 1985 purchasing power parity (PPP), $ln(GDP_{CAPITA})$ is the natural logarithm of the GDP per capita measured in 1985 PPP, and GINI is the Gini coefficient of income inequality using the closest available survey date assuming that the Lorenz curve was unchanged. The details of the definitions of the variables are in Chen et al (1994).

3. As can be seen in table A1, a $1 increase in per capita income will cause the proportion of poor people in the population (below an absolute poverty line) to decline by $25.6/GDP_{CAPITA}$ percentage points, assuming that there is not change in income distribution. It can also be seen that an increase in income equality (i.e. Gini-coefficient) by one percentage point would decrease the share of poor in the total population by 0.7%. This can be also seen in Figure 1 where countries that are above the regression line have less equal income distribution. In other words, poverty can be reduced not only by the growth in the GDP but also by increasing income equality. Without data from different years from developing countries on GDP, poverty and income distribution, it is not possible to carry out meaningful analysis on the effect of increase in trade on income distribution.

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[1] Chen, Shaohua, Gaurav Datt and Martin Ravallion. 1994. Is poverty increasing in the developing world? (including statistical addendum). *The Review of Income and Wealth* 40:359-76. Countries with population over 30 million that were not included in their data set were Argentina, Egypt, Iran, Myanmar, Nigeria, South Africa, South Korea, Turkey, Vietnam and Zaire. The approach by Chen et al (1994) in measuring and comparing poverty is particularly useful for the purposes of this study because they use the same definition of poverty in all countries ($1 dollar per day in 1985 purchasing power parity (PPP)) and they base their estimates on good quality household surveys that have large enough samples.

Table A.1

Effect of growth in GDP per capita on poverty incidence in selected countries (R^2=.62)

Dependent variable: Poor/population	(N=41)	
Variable	estimate	*t*
ln (GDP per capita)	-25.61	*-7.85*
Gini coefficient	0.71	*3.01*
Constant	192.68	*8.09*

4. As can be seen from table A1, poverty decreases at a slower rate at higher per capita income levels. This result follows from the selected functional form (i.e. the natural logarithm of GDP per capita). It should be noted that this functional form fitted the data better than any other form. Also the coefficient of determination was fairly high (R^2=.62) which gives confidence to the results. Thus, an increase of $10 in per capita income in Bangladesh would decrease poverty incidence by 2.9 per cent whereas the same increase would decrease poverty incidence in Malaysia by only 0.4 per cent, assuming no change in income distribution. This diminishing ratio is illustrated in Figure 1, which is a scatter diagram depicting the GDP per capita and poverty incidence for developing countries for which adequate household survey data are available.

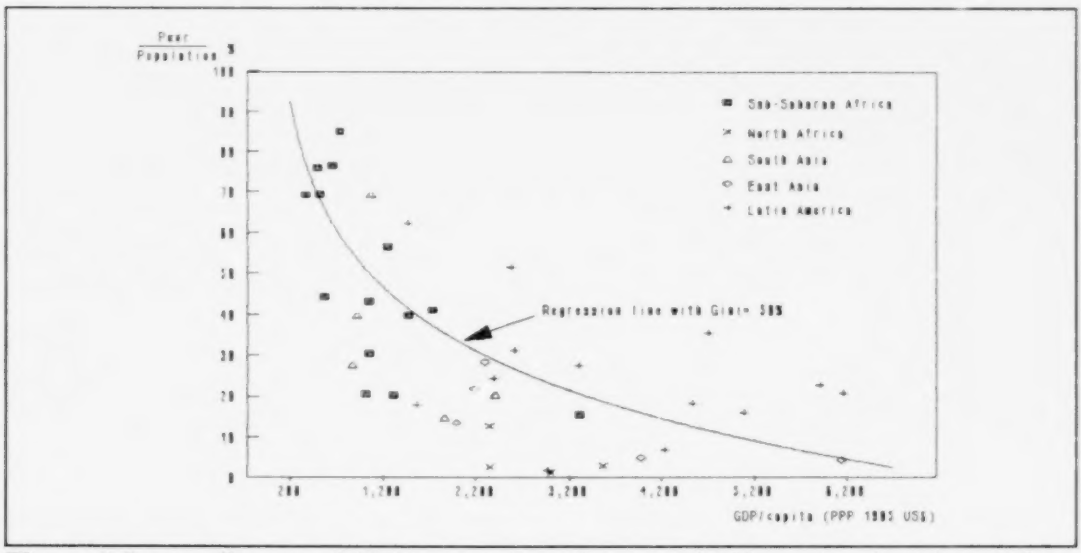

Figure 1 Scatter diagram of GDP per capita and poverty incidence in selected countries

5. The effects of different regional groupings of countries were not found to be statistically significant using an F-test.

6. In order to see how reliable the Chen et al data are, the model was estimated without the Gini coefficient and it was compared with the data in the UNDP Human Development Report of 1994.

Table A.2

Comparison of estimates using data from Chen et al and UNDP (N=41)

	Chen et al data		UNDP data	
	estimate	*t*	estimate	*t*
ln(GDP per capita)	-22.69	*-6.63*	-15.87	*-4.59*
Constant	202.35	*7.81*	169.41	*6.29*
R^2	.53		.35	

7. As shown in table A2, data from Chen et al fitted the model much better. The coefficient of determination R^2 in the model using Chen et al data was .53 whereas it was .35 using UNDP data. This is indirect confirmation for using data that has a uniform poverty line rather than national, relative poverty lines, i.e. the methodology adopted in collecting the UNDP data. Using Chen et al data, the change of one dollar in household income induces a larger (α_1=-22.69) change in poverty than according to the UNDP data (α_2=-15.87). As Chen et al data fit better and as the international comparisons using PPP is appropriate for the purposes of this study, Chen et al data has been utilized as the basis of the analysis contained in this report.